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KOREAN PATENT ABSTRACTS
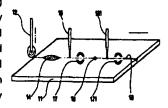
(54) CUTTING METHOD OF NONMETALLIC MATERIALS AND CUTTING EQUIPMENT

(57) Abstract:

PURPOSE: Provided is a method for cutting nonmetallic materials, especially glasses, completely by forming a crack through two times heating and quenching processes using heating beam and quencher. CONSTITUTION: The cutting method comprises the steps of: forming an initial crack on the edge of a nonmetallic material, glass(11), by cracker(12); heating the glass by irradiating a cutting line with a first heating beam(14) from a first optical instrument comprising laser source(10.6micrometer CO_2 laser), mirror and lens; primary quenching to form a crack by a first quencher(15), wherein the quenching materials with high specific heat and thermal capacity are He, N2, He+H2O, and H2O+air; irradiating both sides of a scribe line(18) with a first break beam(17); heating the glass by irradiating the scribe line with a second heating beam(19) from a second optical instrument; secondary quenching by a second quencher(151); irradiating both sides of the scribe line with a second break beam(171); blowing air under the glass to cut the glass completely by lifting the glass.

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